

Date: Monday, 6/12/2006 3:36:47 PM
 User: Jim Johnston

Process Sheet

SPLIT-2

Customer : CU-DAR001 Dart Helicopters Services
 Job Number : 27506
 Estimate Number : 11058
 P.O. Number : NIA
 This Issue : 6/12/2006 S.O. No. : NIA
 Prsht Rev. : NC
 First Issue : NIA Type : PURCHASED PARTS
 Previous Run : NIA
 Written By :
 Checked & Approved By :
 Comment : Est. C0211.26 Added P/O KJ

Drawing Name : 02.500 SUPPORT
 Part Number : D28921
 Drawing Number : D2892 REV A
 Project Number : N/A
 Drawing Revision : A
 Material : NIA
 Due Date : 6/30/2006

Qty: 6 Um: Each

Additional Product

B27506 10X

Job Number:



Seq. #: Machine Or Operation: Description :

1.0 PG PURCHASING



Comment: PURCHASING

Issue P/O: 1572

C206128/06

(10)

Description: D6104-003

Material: 17-4 PH SS (AMS 5643 OR AISI 630) as per Dwg D6104

Material release note required.

Blank size makes (2) D2892-1

2.0 D6104003 17-4 SS Roundbar 3.25"OD



Comment: Qty.: 1.0000 Each(s)/Unit Total: 10.0000 Each(s)

Support

QC6 B6 06-07-11

10

3.0 PACKAGING 1 PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Recieve & Inspect for Transit Damage

Ensure Material Release Note is attached

QC6/10

(10)

4.0 MORI SEIKI MORI SEIKI CNC LATHE LARGE



Comment: MORI SEIKI LATHE

Turn blank for Haas as per Folio FA082

MS 06/08/24 8

RTU

5.0 QC1 INSPECT ALL DIM TO DIM SHEET



Comment: INSPECT ALL DIM TO DIM SHEET

MS 06/08/24 8

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Mfg / Design Mgr	Approval QC Inspector

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Design Mgr	Approval QC Inspector
			Initial Design Mgr	Action Description Design Mgr	Sign & Date			

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

NOTE: Date & initial all entries

QA: N/C Closed: _____ Date: _____

Date: Monday, 6/12/2006 3:36:47 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 02.500 SUPPORT

Job Number: 27506

Part Number: D28921

Job Number:



Seq. #:	Machine Or Operation:	Description :
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6.0	BAND SAW	BAND SAW
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Comment: BAND SAW

Machine as per Folio FA082

Tumble & Deburr

J.G 06/08/30 12

7.0	QC2	INSPECT PARTS AS THEY COME OFF MACHINE
-----	-----	--



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

J.G 06/08/30 12

8.0	QC8	SECOND CHECK
-----	-----	--------------



Comment: SECOND CHECK

SA 06.08.31 12

9.0	POWDER COATING	POWDER COATING
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Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.2) as per QSI 005 4.3

A.M 06-09-02

(12)
(12)

10.0	QC3	INSPECT POWDER COAT/CHEMICAL CONVERSION
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Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

P 06/9/05 (12)

11.0	PACKAGING 1	PACKAGING RESOURCE #1
------	-------------	-----------------------



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: ST166

P 06/9/05 (12)
RB 06/09/05 (12)

12.0	DC	DOCUMENT CONTROL
------	----	------------------



Comment: DOCUMENT CONTROL






Inspection Level 21

06/09/06 (12)

Job Completion



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Mfg / Design Mgr	Approval QC Inspector

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Design Mgr	Approval QC Inspector
			Initial Design Mgr	Action Description Design Mgr	Sign & Date			
06.08.28	4	2 scrap parts. Undercut caused by programming errors		Errors in programs corrected. Parts will be used for set- up then destroyed.	 06.08.28		 06.08.28	 06.08.28

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes ☐ No ☒ DQA:  Date: 06/09/07

NOTE: Date & initial all entries

QA: N/C Closed: _____ Date: _____

DART AEROSPACE LTD	Work Order: 27506
Description: Ø2.500 Support	Part Number: D2892-1
Inspection Dwg: D2892 Rev. A	Page 1 of 1

Inspect dimensions highlighted on inspection sheet drawing D2892 Rev. A/DSK077 Rev. A and record below:

Dim	Min	Max	Go/No Go Gauge	Recorded Actual Dimensions				By	Date
				1	2	3	4		
Lathe Section									
A	2.524	2.529		2.529	2.529	2.529	2.529		
B	3.702	3.722		3.707	3.714	3.715	3.710		
C	2.814	2.834		2.825	2.826	2.829	2.826		
D	0.718	0.738		.725	.725	.725	.725		
E	0.090	0.110		.097	.097	.097	.100		
F	2.714	2.734		2.725	2.721	2.725	2.724		
G	2.029	2.049		2.030	2.029	2.029	2.029		
H	3.214	3.234		3.224	3.222	3.226	3.223		
I	0.913	0.933		.032	.922	.923	.923		
J	0.022	0.042		.032	.032	.032	.032		
K	0.090	0.110		.100	.100	.100	.100		
L									
HAAS Section									
AA	0.115	0.135		0.130	0.130	0.129	0.129		
AB	0.290	0.310		0.298	0.298	0.297	0.298		
AC	0.040	0.060		0.056	0.054	0.055	0.054		
AD	0.115	0.135		0.123	0.124	0.125	0.124		
AE	0.240	0.260		0.255	0.254	0.256	0.256		
AF	0.188	0.193	DT8706	✓	✓	✓	✓		
AG	0.240	0.260		0.250	0.250	0.250	0.250		
AH	1.126	1.146		1.143	1.144	1.144	1.144		
AI	0.454	0.474		0.460	0.460	0.461	0.460		
AJ	0.240	0.260		0.250	0.250	0.250	0.250		
AK	0.053	0.073		0.063	0.063	0.063	0.063		
AL	0.257	0.262	DT8683	✓	✓	✓	✓		
AM	1.663	1.683		1.683	1.683	1.683	1.683		
AN	0.053	0.073		0.063	0.063	0.063	0.063		
AO	0.022	0.042		0.032	0.032	0.032	0.032		
AP	2.779	2.789		2.782	2.782	2.783	2.781		
AQ									
AR									
Accept/Reject									

Measured by:	MS/J.G
Date:	06/08/24

Audited by:	SA
Date:	06.08.24

Rev	Date	Change	Revised by	Approved
A	02.12.12	New Issue	KJ/RF	✱

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SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO

DART AEROSPACE LTD	Work Order: 27506
Description: Ø2.500 Support	Part Number: D2892-1
Inspection Dwg: D2892 Rev. A	Page 1 of 1

Inspect dimensions highlighted on inspection sheet drawing D2892 Rev. A/DSK077 Rev. A and record below:

				Recorded Actual Dimensions					
Dim	Min	Max	Go/No Go Gauge	Ø5	Ø6	Ø7	Ø8	By	Date
Lathe Section									
A	2.524	2.529		2.528	2.528	2.529	2.529		
B	3.702	3.722		3.712	3.712	3.712	3.712		
C	2.814	2.834		2.829	2.829	2.829	2.826		
D	0.718	0.738		.725	.725	.725	.725		
E	0.090	0.110		.103	.100	.100	.100		
F	2.714	2.734		2.726	2.724	2.725	2.722		
G	2.029	2.049		2.029	2.029	2.029	2.029		
H	3.214	3.234		3.225	3.224	3.224	3.224		
I	0.913	0.933		.923	.923	.923	.923		
J	0.022	0.042		.032	.032	.032	.032		
K	0.090	0.110		.100	.100	.100	.100		
L									
HAAS Section									
AA	0.115	0.135		0.130	0.130	0.130	0.130		
AB	0.290	0.310		0.300	0.300	0.300	0.300		
AC	0.040	0.060		0.054	0.055	0.054	0.054		
AD	0.115	0.135		0.124	0.126	0.124	0.124		
AE	0.240	0.260		0.250	0.250	0.250	0.250		
AF	0.188	0.193	DT8706	✓	✓	✓	✓		
AG	0.240	0.260		0.250	0.250	0.250	0.250		
AH	1.126	1.146		1.145	1.145	1.144	1.144		
AI	0.454	0.474		0.464	0.464	0.463	0.463		
AJ	0.240	0.260		0.250	0.250	0.250	0.250		
AK	0.053	0.073		0.063	0.063	0.063	0.063		
AL	0.257	0.262	DT8683	✓	✓	✓	✓		
AM	1.663	1.683		1.683	1.683	1.683	1.683		
AN	0.053	0.073		0.063	0.063	0.063	0.063		
AO	0.022	0.042		0.032	0.032	0.032	0.032		
AP	2.779	2.789		2.782	2.781	2.782	2.781		
AQ									
AR									
Accept/Reject									

Measured by:	MB/BC/SG
Date:	06/08/24

Audited by:	SA
Date:	06.08.24

Rev	Date	Change	Revised by	Approved
A	02.12.12	New Issue	KJ/RF	✱

DART AEROSPACE LTD	Work Order: 27506
Description: Ø2.500 Support	Part Number: D2892-1
Inspection Dwg: D2892 Rev. A	Page 1 of 1

Inspect dimensions highlighted on inspection sheet drawing D2892 Rev. A/DSK077 Rev. A and record below:

Dim	Min	Max	Go/No Go Gauge	Recorded Actual Dimensions				By	Date
				1	2	3	4		
Lathe Section									
A	2.524	2.529		2.536	2.538				
B	3.702	3.722		3.699	3.710				
C	2.814	2.834		2.825	2.765				
D	0.718	0.738		.725	.720				
E	0.090	0.110		.091/.120	.092/.105				
F	2.714	2.734		2.722	2.726				
G	2.029	2.049		2.029	2.036				
H	3.214	3.234		3.222	3.225				
I	0.913	0.933		N/A	.923				
J	0.022	0.042		.032	.032				
K	0.090	0.110		.100	.100				
L									
HAAS Section									
AA	0.115	0.135							
AB	0.290	0.310							
AC	0.040	0.060							
AD	0.115	0.135							
AE	0.240	0.260							
AF	0.188	0.193	DT8706						
AG	0.240	0.260							
AH	1.126	1.146							
AI	0.454	0.474							
AJ	0.240	0.260							
AK	0.053	0.073							
AL	0.257	0.262	DT8683						
AM	1.663	1.683							
AN	0.053	0.073							
AO	0.022	0.042							
AP	2.779	2.789							
AQ									
AR									
Accept/Reject									

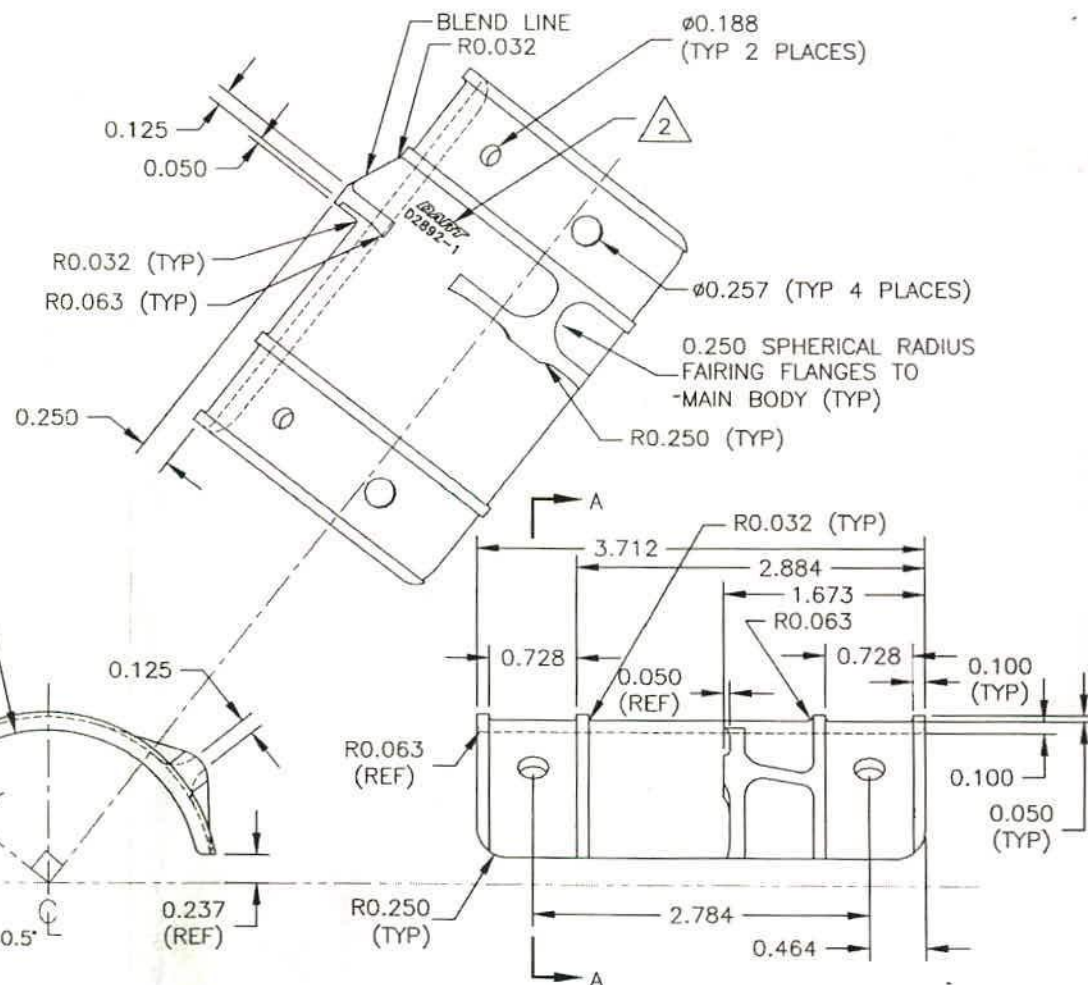
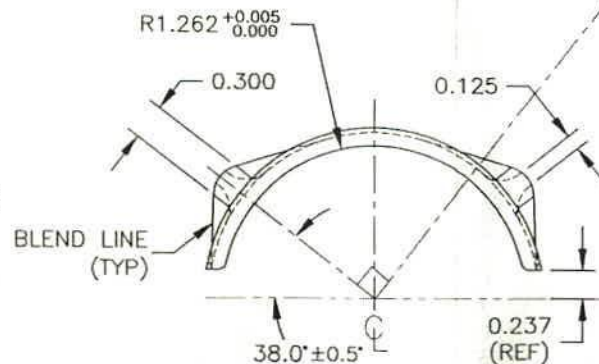
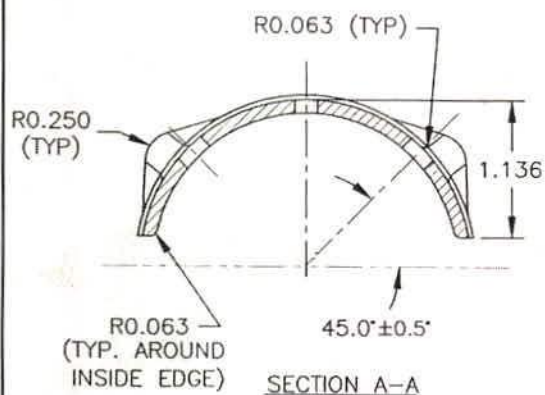
Measured by: MR/SG
Date: 06/08/25

Audited by: J.G
Date: 06/08/31

Rev	Date	Change	Revised by	Approved
A	02.12.12	New Issue	KJ/RF	

D2892-1

- 1) MATERIAL: 17-4 PH STAINLESS STEEL
HEAT TREAT TO H900 CONDITION
(900°F FOR 1 HR, AIR COOL)
MIN UTS = 170 KSI (38 HRc)
- 2) IDENTIFY WITH DART LOGO (PER DART SUPPLIED GRAPHIC) AND PART NUMBER IN THIS AREA WITH 0.125 HIGH LETTERING 0.010-0.020 DEEP
- 3) BREAK ALL UNMARKED SHARP EDGES 0.010 TO 0.020
- 4) PART IS SYMMETRIC ABOUT CENTERLINE
- 5) TOLERANCES ARE PER DART QSI 018 (REF. X.XXX = ± 0.010) UNLESS OTHERWISE NOTED
- 6) ALL DIMENSIONS ARE IN INCHES
- 7) FINISH: POWDER COAT WHITE (REF. 4.3.5.2) PER DART QSI 005 4.3



COPYRIGHT © 2000 BY DART AEROSPACE LTD.		00.11.17		NEW ISSUE	
DESIGN	CP	DRAWN BY	CP	DART	DART AEROSPACE LTD. WARRICKSLEY, ONTARIO, CANADA
CHECKED	##	APPROVED	##	DRAWING NO.	REV. A
DATE	00.11.17	TITLE	D2892		
				SCALE	1:1
				SHEET 1 OF 1	
				Ø2.500 SUPPORT	

NO. 21506
 WORK ORDER
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COPPER AND BRASS SALES

MATERIAL TYPE STAINLESS STEEL

AISI SERIES
200 300 400
AND
PRECIPIT HARDENING GRADES

"WARNING"

INHALATION OF FUMES, FRESHLY GENERATED BY THE WELDING OF STAINLESS STEEL CONTAINING ONE OR MORE OF THE FOLLOWING INGREDIENTS, ZINC, MAGNESIUM OR COPPER, ARE KNOWN TO CAUSE METAL FUME FEVER. INHALATION OF DUST OR FUME FROM STAINLESS STEEL CONTAINING ONE OR MORE OF THE FOLLOWING INGREDIENTS, ALUMINUM, IRON, MANGANESE, SELENIUM, OR TIN, HAS ALSO BEEN REPORTED TO CAUSE METAL FUME FEVER AND MAY CAUSE IRRITATION TO THE RESPIRATORY TRACT AND/OR AGGRAVATE PRE-EXISTING CONDITIONS. TARGET ORGAN IS PRIMARILY THE LUNG.

THIS PRODUCT CONTAINS CHROMIUM. EXPOSURE TO CHROMIUM DUST OR FUME MAY CAUSE METAL FUME FEVER WITH FLU-LIKE SYMPTOMS AND KIDNEY AND LIVER DAMAGE. UNDER HIGH TEMPERATURES, HEXAVALENT CHROMIUM MAY BE PRODUCED, IF IN THE INSOLUBLE FORM, IT IS A CONFIRMED HUMAN CARCINOGEN. THIS PRODUCT MAY ALSO CONTAIN NICKEL AND COBALT. INHALATION OF NICKEL OR COBALT DUST OR FUME MAY RESULT IN INFLAMMATION OF THE RESPIRATORY TRACT. NICKEL AND COBALT HAVE BEEN IDENTIFIED AS POTENTIAL HUMAN CARCINOGENS.

IF COATED WITH OIL, MAY CAUSE SKIN IRRITATION/DERMATITIS BY CONTACT. WELDING FUME IS LISTED AS A POSSIBLE CARCINOGENIC TO HUMANS.

READ THE STAINLESS STEEL MATERIAL SAFETY DATA SHEET (MSDS) ON FILE WITH YOUR EMPLOYER BEFORE WORKING WITH THIS MATERIAL

- * If processing or recycling produces particulate, use exhaust ventilation or other controls designed to prevent exposure to workers. Examples of such activities include melting, welding, grinding, abrasive sawing, sanding and polishing. Any activity which abrades the surface of this material can generate airborne particulate. Use respiratory protection (P100, quantitative fit testing required) if exposures exceed the permissible limits.
- * The Occupational Safety and Health Administration (OSHA) have set mandatory limits on occupational exposures.
- * Stainless Steel, in solid form and as contained in finished products presents no special health risk.
- * Sold for manufacturing purposes only. This product can be recycled; contact your sales representative.

The Occupational Safety and Health Administration require employers to provide training in the proper use of this product.

For additional information, call or write to Copper and Brass Sales, 22355 West Eleven Mile Road, Southfield, MI 48033, telephone 248-233-5600, or visit our web site @ www.copperandbrass.com.



VALBRUNA
SLATER STAINLESS, INC.
 2400 Taylor Street West, P.O. Box 630
 Fort Wayne, Indiana USA 48801
 Phone: 260-434-2892 Fax: 260-434-2905

Handwritten: T.O # CE 2857

Product Certification Report

Report Number: **4044260**

Certified on Feb 14, 2005 Page 1 of 2

Order I.D. 0500135 028		Order Date 1/19/05		Commodity Code	
Dim 1 3.2500	Dim 2 .0000	Dim 3 .0000	Heat I.D. 414958	Customer I.D. 002471	Customer Purchase Order 14121
Product Shape Rounds			Product Surface HR & Rough Turned		Customer Grade 630
Length (Inches) 132.000 Min. 156.000 Max.			Bill of Lading # 400811	Weight	

Ship To

FIRST METALS, INC.
4747 OATES ROAD
HOUSTON, TX 77013

Sold To

VALBRUNA STAINLESS, INC.
4747 OATES ROAD
HOUSTON, TX. 77013

Lifts: 0042

API 6A

FMI630 9.15.03

ASTMA 564-02a GR 630

AISI 17400

FMIGB 9.15.03

ASTM A484-00

UNS S17400

AMS 5643Q

ASMESA-564-02

CHEMICAL ANALYSIS

C	Mn	P	S	Si	Cr	Ni	Mo	Cu	N	Cb	Ta	Cb+Ta
.04	.62	.018	.022	.46	15.62	4.68	.15	3.31	.04	.30	.001	.30

HB

344

TENSILE PROPERTIES

CAPABILITY

HB	TS (PSI)	.2%YS (PSI)	%EL(2")	%RA	AGE(F)
419	207000	190300	15.0	48.0	900

MAGNETIC PARTICLE TEST

FREQ SEV

AVG .00 .00

PRODUCTION HEAT TREATMENT

SOL-ANN(F) SOL-ANN(HR) QUENCH
1900 6.00 Air

MACRO ASTM E340/E381

MACRO

OK

OK

OK

PERCENT FERRITE

% FERRITE

AVG 1.5

No mercury or low melting alloy contamination. No weld repair.

Reduction ratio 5 To 1 Min.

Electric Furnace melted; AOD refined.

Ultrasonic test OK.

We certify that the contents of this report are correct and that all operations performed by our company or subcontractors are in compliance with material specifications and the ASME Boiler & Pressure Code. Section III, Subsection NCA-3800, 2001 edition. 02 Addenda

Results relate only to the items tested. Certification shall not be reproduced except in full, without written approval of Valbruna Stainless Inc. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes, including Federal law, Title 18, Chapter 47. Consult material safety data sheet (MSDS) for hazard info.

I hereby certify that the reported figures are correct as contained in the records of the corporation.

Manager Laboratory Services

Dennis Hackett
 Dennis Hackett

**VALBRUNA****SLATER STAINLESS, INC.**2400 Taylor Street West, P.O. Box 630
Fort Wayne, Indiana USA 46801
Phone: 260-434-2882 Fax: 260-434-2905**Product Certification Report**Report Number: **4044260**

Certified on Feb 14, 2005 Page 2 of 2

Order I.D. 0500135 028		Order Date 1/19/05		Commodity Code			
Dim 1 3.2500	Dim 2 .0000	Dim 3 .0000	Heat I.D. 414958	Customer I.D. 002471	Customer Purchase Order 14121 <i>PO# CE2857</i>		
Product Shape Rounds			Product Surface HR & Rough Turned			Customer Grade 630	
Length (Inches) 132.000 Min. 156.000 Max.			Bill of Lading # 400811	Weight			

**Ship
To****FIRST METALS, INC.
4747 OATES ROAD
HOUSTON, TX 77013****Sold
To****VALBRUNA STAINLESS, INC.
4747 OATES ROAD
HOUSTON, TX. 77013**

Chemical testing performed to one or several of the following ASTM methods: E415, E572, E1019, E1085, E1086.
Material melted in Italy, manufactured in the United States.
Material conforms to listed specifications.
Quality system is compliant with ISO 9001:2000. Produced in accordance with EN 10204 3.1B.

Results relate only to the items tested. Certification shall not be reproduced except in full, without written approval of Valbruna Stainless Inc. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes, including Federal law, Title 18, Chapter 47. Consult material safety data sheet (MSDS) for hazard info.
I hereby certify that the reported figures are correct as contained in the records of the corporation.

Manager Laboratory Services

Dennis Hackett